



501107

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V

**DATE:** SEP 26 2008

**SUBJECT:** Request for Concurrence with the Explanation of Significant Differences for the North Bronson Industrial Area Superfund Site in Bronson, Michigan

**FROM:** Wendy L. Carney, Chief *Wendy L. Carney*  
Remedial Response Branch #1

Eileen Furey, Chief *E.F.*  
ORC, Multi-Media Branch #2 - Section III

**TO:** Richard C. Karl, Director  
Superfund Division

By this memorandum, we are recommending that you approve the Explanation of Significant Differences (ESD) for the former North Bronson Industrial Area Superfund Site in Bronson, Michigan.

This ESD was prepared in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499, the National Contingency Plan, 40 CFR Part 300, and Agency policy. We have reviewed the ESD and found it to be technically sufficient. As such, we believe that implementation of this remedial measure is a proper exercise of your delegated authority.

Please contact us if you have any questions.

Enclosure

**North Bronson Industrial Area Superfund Site**

**Bronson, Michigan 49028**

**Explanation of Significant Differences**

**U.S. EPA Region 5  
September 2008**

## **EXPLANATION OF SIGNIFICANT DIFFERENCES**

### **MODIFYING THE 1998 RECORD OF DECISION FOR OPERABLE UNIT 1 OF THE NORTH BRONSON INDUSTRIAL AREA SUPERFUND SITE**

#### **I. INTRODUCTION**

The North Bronson Industrial Area Superfund (NBIA) Site is located in Bronson, Michigan. The Site includes two lagoon areas, a county drain that runs adjacent to the lagoons, the sewers used to transport wastewater to the lagoons, and associated contaminated groundwater (see Figure 1). Operable Unit 1 (OU1) of the NBIA Site includes the lagoons, the county drain, and the contaminated groundwater associated with the lagoons and the drain. A Record of Decision (ROD) for OU1 was issued on June 19, 1998. The sewers and their associated contaminated groundwater are to be addressed in a separate operable unit, designated as Operable Unit 2 (OU2).

The United States Environmental Protection Agency (U.S. EPA) is the lead agency for conducting the remedial action at the Site under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. Section 9601, et seq. Section 117(c) of CERCLA states that U.S. EPA shall publish an Explanation of the Significant Differences (ESD) between the remedial action being undertaken at a site and the remedial action set forth in the ROD if U.S. EPA determines that the remedial action at the site differs significantly from the remedial action selected in the ROD. U.S. EPA shall also publish the reasons such changes are being made. The National Contingency Plan (NCP) further indicates that an ESD, rather than a ROD amendment, is appropriate where the changes being made to the remedial action are significant but do not fundamentally alter the overall remedy with respect to scope, performance, or cost. U.S. EPA has determined that the changes outlined in this ESD are significant but not fundamental. The Administrative Record for this ESD provides information supporting the modifications made in this document.

This ESD updates the remedy selected in the June 19, 1998 NBIA OU1 ROD by eliminating the requirement for excavation of the eastern lagoons and clarifying what constitutes appropriate containment for lagoon closure. These modifications retain and improve upon the excavation, consolidation, and containment components of the NBIA OU1 ROD. As none of these significant differences is considered a fundamental change to the NBIA OU1 ROD, U.S. EPA has determined that no public comment period is required. Nonetheless, U.S. EPA discussed the possible changes to the approach for lagoon closure in a July 2007 Fact Sheet and at a July 2007 public meeting.

This document shall become part of the Administrative Record file, which is available for viewing at the Bronson Branch Library, 207 N. Matteson St., Bronson MI 49028-1308. Normal library hours are:

Sunday:	Closed
Monday:	Closed
Tuesday:	12:00 pm to 6:00 pm Eastern Time (ET)
Wednesday:	10:30 am until 6:00 pm ET
Thursday:	10:30 am until 5:00 pm ET
Friday:	10:30 am until 4:00 pm ET
Saturday:	9:00 am until 12:00 pm ET

The Administrative Record file is also available at U.S. EPA's Records Center, 77 West Jackson Blvd., Chicago, Illinois 60604-3590. Normal business hours for the Records Center are:

Sunday:	Closed
Monday:	8:00 am until 4:00 pm Central Time (CT)
Tuesday:	8:00 am until 4:00 pm CT
Wednesday:	8:00 am until 4:00 pm CT
Thursday:	8:00 am until 4:00 pm CT
Friday:	8:00 am until 4:00 pm CT
Saturday:	Closed

## **II. SITE HISTORY**

The NBIA Superfund Site is located in Branch County, Bronson, Michigan 49028. OU1 of the Site consists of two lagoon areas, a county drain that runs adjacent to the lagoons (County Drain #30 [CD#30]), and associated contaminated groundwater. OU2 of the Site includes the sewers that were historically used to transport wastewater to the lagoons and contaminated soil and groundwater associated with the sewers. The U.S. EPA Identification Number for the Site is MID005480900.

Several industries in the area discharged plating and other industrial wastewaters to seepage lagoons between 1939 and 1981. An industrial sewer system was used to transport industrial wastewater to both sets of lagoons, which were owned and maintained by the City of Bronson. The seepage lagoons are no longer used for waste disposal; however, they contain large quantities of heavy metal sludges and contaminated berm soil. Work performed at the associated North Bronson Former Facilities (NBFF) Site investigated source areas at the former Bronson Reel facility, the former L.A. Darling facility, and the former Scott Fetzer facility. These facilities historically discharged contaminated wastewater to the City's lagoons. Groundwater contamination from the NBFF Site overlaps with groundwater contamination within the NBIA Site.

The majority of the City of Bronson is within a one-mile radius of the old lagoons at the NBIA Site. The area surrounding the Site is mixed industrial and residential; north of the Site is primarily rural. The majority of the residents in the area of the Site are connected to the municipal water supply system, though an estimated 3,000 people within three miles of the Site use wells as a source of drinking water. The primary supply wells for the municipal water system are located approximately 5,000 feet east of the Site and are screened in the upper aquifer.

On June 19, 1998, the Michigan Department of Environmental Quality (MDEQ) issued, and the U.S. EPA concurred with, a ROD for OU1 of the NBIA Site. OU1 was developed to address the eastern and western sludge lagoons, the contaminated sediment in CD#30, and the associated contaminated groundwater. The full text of the 1998 NBIA OU1 ROD can be found at <http://www.epa.gov/superfund/sites/rods/fulltext/r0598024.pdf>.

The major components of the 1998 NBIA OU1 ROD included:

- Excavating contaminated eastern lagoon sludge and soil and filling the excavated area with clean soil.
- Dredging sediment from CD#30.
- Consolidating contaminated waste from the eastern lagoon and CD#30 into the western lagoons.
- Covering the western lagoons to control risks to human health and the environment associated with

exposure to contaminants.

- Installing a French Drain between the western lagoons and CD#30 to capture contaminated groundwater.
- Pumping contaminated groundwater from the French Drain.
- Constructing a treatment wetland to treat contaminated water collected by the French Drain. Discharging treated water from the treatment wetland to CD#30.
- Monitoring groundwater and surface water quality to assess the effectiveness of the remedy.
- Marking the western lagoon area and the treatment wetland with permanent site markers.
- Fencing the western lagoon area and the treatment wetland to control risks to human health and the environment associated with exposure to contaminants.
- Placing enforceable restrictions on future land and groundwater use.

For additional information on the extent of contamination and details concerning the remedy selected for OU1 of the NBIA Site, please see the documents available in the Administrative Record.

### **III. STATEMENT OF BASIS AND PURPOSE**

This ESD updates the remedy selected in the 1998 NBIA OU1 ROD by eliminating the requirement for excavation of the eastern lagoon and clarifying what constitutes appropriate containment for lagoon closure. These modifications retain and improve upon the containment concept of the NBIA OU1 ROD and are not considered major modifications of the waste management portion of the NBIA OU1 ROD.

Although the NBIA OU1 ROD was issued in 1998, the cleanup plan for the lagoons and CD#30 has not yet been implemented. During pre-design studies, further site characterization revealed that some hydrogeological conditions differed from what was understood at the time of the NBIA OU1 ROD. This information brought into question the efficacy of using a French drain and constructed wetland to treat contaminated groundwater. In addition, two of the three NBFF operable units (the former L.A. Darling facility and the former Scott Fetzer facility) have been identified as continuing sources of volatile organic compound (VOC) contamination to upgradient groundwater. The NBIA OU2 industrial sewers also lie within the same geographic area as the NBFF Site. Additional work is necessary to further assess the NBIA sewers and to determine to what extent contamination from historical wastewater transport has impacted the aquifer. The NBFF groundwater contamination and the likely contamination from the former NBIA sewers are upgradient of the western lagoon area. Because of the proximity of the NBFF sites and the NBIA sewers, the upgradient contamination associated with these sources shall be factored into the reevaluation of an appropriate groundwater remedy for NBIA OU1. This ESD does not affect the groundwater treatment remedy component of the NBIA OU1 ROD. The existing groundwater remedy will remain in place until sufficient data are collected to select a replacement treatment approach, if necessary. At that time, a ROD Amendment or ESD, as appropriate, will be issued to modify the groundwater treatment remedy.

The goal of the 1998 NBIA OU1 ROD was to protect human health and the environment. The NBIA OU1 ROD did not identify specific remedial action goals or objectives. To provide greater clarity as the ESD modifications are reviewed, the primary remedial action goals from the original 1998 NBIA OU1 ROD are considered to be:

1. Reduce direct contact with and erosion of lagoons wastes and contaminated berm soil;
2. Reduce discharge of contaminated groundwater from lagoons to levels protective of CD#30;

3. Achieve Maximum Contaminant Levels (MCLs) and nonzero Maximum Contaminant Level Goals (MCLGs) at points of compliance at or within the Site boundary.
4. Reduce ecological risks associated with CD#30 sediment;
5. Reduce human health risks associated with direct contact with CD#30 sediment; and
6. Implement interim measures to reduce use of impacted groundwater.

The U.S. EPA is the lead agency for this project. The State of Michigan, through the MDEQ, which is the support agency for this project, has indicated its support for the modifications identified in this ESD.

Site Element	1998 NBIA OU1 ROD	ESD Modification
Western Lagoons	<ul style="list-style-type: none"> <li>Construct cover to contain wastes and contaminated berm soil.</li> <li>Mark the western lagoon area with permanent site markers.</li> <li>Fence the western lagoon area to control risks to human health and the environment associated with exposure to contaminants.</li> <li>Place enforceable restrictions on future land and groundwater use.</li> </ul>	<ul style="list-style-type: none"> <li>Use soil stabilization/ solidification techniques as needed to provide necessary strength for construction and maintenance of cover.</li> <li>Stabilization / solidification is also a secondary technology that can provide additional containment by binding metals in sludge and contaminated berm soils.</li> <li>Construct and maintain cover over lagoon area.</li> <li>Mark the western lagoon area with permanent site markers.</li> <li>Fence the western lagoon area to control risks associated with exposure to contaminants</li> <li>Place enforceable restrictions on future land and groundwater use</li> </ul>
Eastern Lagoon	<ul style="list-style-type: none"> <li>Excavate and place in western lagoons, prior to construction of cover over lagoons</li> </ul>	<ul style="list-style-type: none"> <li>Use stabilization / solidification technology to allow Eastern Lagoons to remain in place by providing necessary waste mass strength and acting as a secondary technology to support containment of metals in the waste mass.</li> <li>If eastern lagoon is not consolidated with western lagoons, construct and maintain cover.</li> <li>Mark the eastern lagoon area with permanent site markers.</li> <li>Provide access controls for the Eastern Lagoon to minimize risks associated with exposure to contaminants. Because the Eastern Lagoon area is adjacent to an active industrial operation, there is some flexibility in how access restrictions could be implemented.</li> <li>Place enforceable restrictions on future land and groundwater use</li> </ul>

#### **IV. BASIS FOR AND DESCRIPTION OF THE SIGNIFICANT DIFFERENCES**

##### **A. Enhancement of Containment Requirements Established in the 1998 NBIA OU1 ROD**

The western and eastern lagoon materials currently do not have sufficient strength to support the cover that is necessary for closure. Even if contaminated berm soils were to be mixed with lagoon wastes to provide a more consistent waste mass, the resulting material would not have sufficient strength to allow the construction of a maintainable cover. Therefore, the use of soil stabilization and solidification techniques is incorporated in the remedy as needed to allow the closure of the lagoons, as required by the NBIA OU1 ROD.

The use of stabilization / solidification provides a secondary benefit, in that the additives used to achieve stabilization/solidification can aid in the containment of the metal contamination that is present in the lagoon wastes. This ESD clarifies that the stabilization and solidification of sludge and contaminated berm soils (either in-situ or ex-situ on Site) falls within the scope of the NBIA OU1 ROD. U.S. EPA considers stabilization / solidification to be an acceptable secondary technology to provide the necessary waste mass strength. Use of this technology is also expected to reduce the leaching of the metals from the waste materials and is therefore an important component in a source control remedy designed to achieve the goal of reducing discharge of contaminated groundwater from the lagoons to levels protective of CD#30. Any release of VOCs due to the exothermic reaction from the addition of the stabilization / solidification mixture will be evaluated during the remedial design process and monitored and addressed, as appropriate, during implementation of the remedial action.

##### **B. Modification of the Requirement for Excavation and Consolidation of Eastern Lagoon Sludges and Impacted Soils**

The 1998 NBIA OU1 ROD requires the excavation of contaminated waste from the eastern lagoon and the placement of this material within the western lagoons. This approach makes sense if the goal is to limit the area where groundwater treatment and institutional controls are needed. However, if a stabilization / solidification mix is to be added to sludge and contaminated berm soil in order to provide sufficient strength for cover placement, this approach (to minimize the area where groundwater treatment and institutional controls are needed) may not be optimal. The addition of the stabilization / solidification mix would, as a secondary benefit, reduce leaching of metals, which are the primary contaminants of concern at the eastern lagoon.

The possibility of leaving the eastern lagoon in place was contemplated by the MDEQ during the ROD process. In the NBIA OU1 ROD Responsiveness Summary, MDEQ notes the following:

*"... MDEQ is willing to consider the possibility of leaving the EL waste in place, covering it with a protective barrier, capturing EL [eastern lagoon] contaminated groundwater, and piping it to the treatment wetland, if this is shown to be a cost-effective and protective alternative during remedial design. Refer to site-wide Alternative 8 in the ROD."*

The characteristics of the wastes in the eastern lagoon and the western lagoons are different. Bench-scale and pilot-scale stabilization / solidification studies have shown that different stabilization / solidification mixes may be appropriate for western and eastern lagoon sludges and impacted soils. Therefore, U.S. EPA has determined that the eastern lagoon can be stabilized / solidified in place to enhance the strength of the waste mass. Beyond the necessary function of providing strength for placement of the cover, the addition of the stabilization / solidification mix will provide for further containment of metals and reduce leaching to

groundwater. As with the western lagoons, any release of VOCs due to the exothermic reaction from the addition of the stabilization / solidification mixture will be evaluated during the remedial design process and monitored and addressed, as appropriate, during implementation of the remedial action.

If the eastern lagoon is retained in place for closure, the ROD-required lagoon capping requirements for the western lagoon will also apply to the eastern lagoon. In addition, the ROD-required site control requirements for the western lagoons are extended and applied to the eastern lagoon. Specifically, the eastern lagoon area will need to be marked with permanent site markers. Access to the eastern lagoon area must be controlled, and enforceable restrictions on future use will be required on impacted property deeds to restrict future land and groundwater use.

The PRPs remain responsible for groundwater contamination at and from the eastern lagoon. The original groundwater remedy, which requires construction of a wetland to treat groundwater contamination, will also become applicable to the eastern lagoon, unless or until U.S. EPA modifies the groundwater component of the 1998 NBIA OU1 ROD.

## **V. SUPPORT AGENCY COMMENTS**

The State of Michigan, by way of the MDEQ, has reviewed the modifications identified in this ESD and has provided a letter of concurrence. The letter of concurrence is provided as Attachment 1.

## **VI. PUBLIC PARTICIPATION COMPLIANCE**

Because none of the NBIA OU1 ROD modifications embodied in this ESD is considered a fundamental change to the NBIA OU1 ROD, U.S. EPA has determined that no public comment period is required. However, U.S. EPA discussed the possible addition of a lagoon stabilization / solidification step in a July 2007 Fact Sheet and at a July 2007 public meeting. Informal response from meeting attendees was positive.

The public participation requirements set forth in 40 CFR 300.435(c)(2)(i) will be met. After approval of the ESD, U.S. EPA will publish a public notice of availability and a brief description of the ESD in major local newspapers of general circulation. This document shall become part of the Administrative Record file, which is available for viewing at the Bronson Branch Library, 207 N. Matteson St., Bronson MI 49028-1308, and at U.S. EPA's Records Center, 77 West Jackson Blvd., Chicago, Illinois 60604-3590.

## **VII. CONCLUSION / STATUTORY DETERMINATIONS**


As required under CERCLA Section 121, the modified remedy protects human health and the environment, complies with federal and state requirements that are Applicable or Relevant and Appropriate Requirements to the remedial action, is cost-effective, and uses permanent solutions and alternative treatment technologies to the maximum extent practicable. The utilization of stabilization / solidification as a secondary technology to support waste containment should reduce the mobility of the metals in the sludges and increase the permanence of the remedy. As required by CERCLA, a remedy review will be conducted no less often than every 5 years after initiation of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment. No ARAR waivers are required for this remedy.



The Administrative Record Index for this ESD is included in Attachment 2. It identifies the documents relied upon for decision-making relevant to this ESD. Upon review of the suggested changes and the information submitted to support such changes, U.S. EPA, therefore, has changed the remedy identified in the 1998 NBIA OU1 ROD in the manner described above. )

9-26-08

Date

A handwritten signature in cursive script, reading "Richard C. Karl", written over a horizontal line.

Richard C. Karl  
Director, Superfund Division  
U.S. EPA Region 5



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



STEVEN E. CHESTER  
DIRECTOR

September 18, 2008

Ms. Terese Vandonsel, Remedial Project Manager  
United States Environmental Protection Agency  
Region 5  
77 West Jackson Boulevard (SR-6J)  
Chicago, Illinois 60604

Dear Ms. Vandonsel:

SUBJECT: North Bronson Industrial Area Superfund Site Explanation of Significant Difference (ESD)

Staff of the Michigan Department of Environmental Quality (MDEQ) has reviewed the June 2008 ESD modifying the 1998 Record of Decision (ROD) for Operable Unit 1 (OU1) of the North Bronson Industrial Area (NBIA) Superfund Site. The ESD updates the remedy selected in the June 19, 1998, OU1 ROD by eliminating the requirement for excavation of the eastern lagoons and clarifying what constitutes appropriate containment for lagoon closure.

Enhancement of Containment Requirements

The potentially responsible parties (PRPs) have determined that the lagoon materials do not have sufficient strength to support the cover that is necessary for closure. They have proposed use of stabilization/solidification materials to provide a sufficient base for cover construction and maintenance. Use of stabilization/solidification to provide a stable base for lagoon cover is acceptable to the MDEQ. The MDEQ strongly encourages the PRPs to incorporate the solidification mixture into the entire extent (depth) of the lagoon sludge. This would significantly improve the potential for the solidification/stabilization process to minimize the availability of metals to leach into groundwater and may result in long-term cost savings for groundwater treatment. The PRPs must provide assurance that the exothermic reaction that is part of the stabilization/solidification process will not result in unacceptable releases of air emissions, including chemical contaminants and excessive dust.

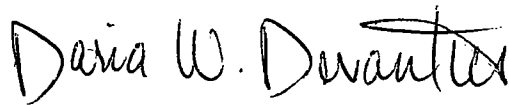
Modification of Requirements for Excavation and Consolidation of Eastern Lagoon Sludges and Impacted Soils

As contemplated in the decision documents in 1998, the proposal to manage the eastern lagoon area in place, in lieu of consolidation with the western lagoons, is also acceptable to the MDEQ. The same controls and recommendations apply to the eastern lagoon area as the western. In addition, as stipulated in the 1998 documents, the PRPs must be prepared to manage contaminated groundwater that may continue to migrate from the lagoon area if the sludges and impacted soils are left in place.

To summarize, the MDEQ has no objections to the PRP-proposed stabilization/solidification remedy enhancement and proposal to manage the eastern lagoon area in place, in lieu of consolidation with the western lagoons, provided this remedy enhancement in no way exacerbates the environmental conditions at this Site. The MDEQ's support is also contingent upon compliance with all applicable or relevant and appropriate environmental requirements.

If you have any questions, please feel free to contact Ms. Deborah Larsen, Project Manager, Specialized Sampling Unit, Superfund Section, Remediation and Redevelopment Division, at 517-373-4825, or you may contact me at the number below.

Sincerely,

  
for David Kline, Acting Chief  
Superfund Section  
Remediation and Redevelopment Division  
517-373-8354

cc: Ms. Daria W. Devantier, MDEQ  
Ms. Deborah Larsen, MDEQ/NBIA File J2  
Mr. Charles Graff, MDEQ

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REMEDIAL ACTION

ADMINISTRATIVE RECORD  
NORTH BRONSON INDUSTRIAL AREAS SITE  
BRONSON, MICHIGAN

ORIGINAL  
SEPTEMBER 18, 2008

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	00/00/00	MDEQ	U.S. EPA	MDEQ Administrative Record Site Index for the North Bronson Industrial Area Site (Incorporated by Reference Not Copied for Physical Inclusion)	20
2	06/19/98	U.S. EPA	Public	Record of Decision for the North Bronson Industrial Area, OU1	91
3	06/14/99	U.S. EPA	Defendants	Consent Decree in the Matter of United States v. Bronson Plating et al., Relating to the North Bronson Industrial Site	89
4	02/29/00	U.S. EPA	Defendants	Order Entering Consent Decree	3
5	05/00/08	O'Brien & Gere	North Bronson Industrial Area OU1 PRP Group	Lagoon Sludge Treatability Study, North Bronson Industrial Area OU1	

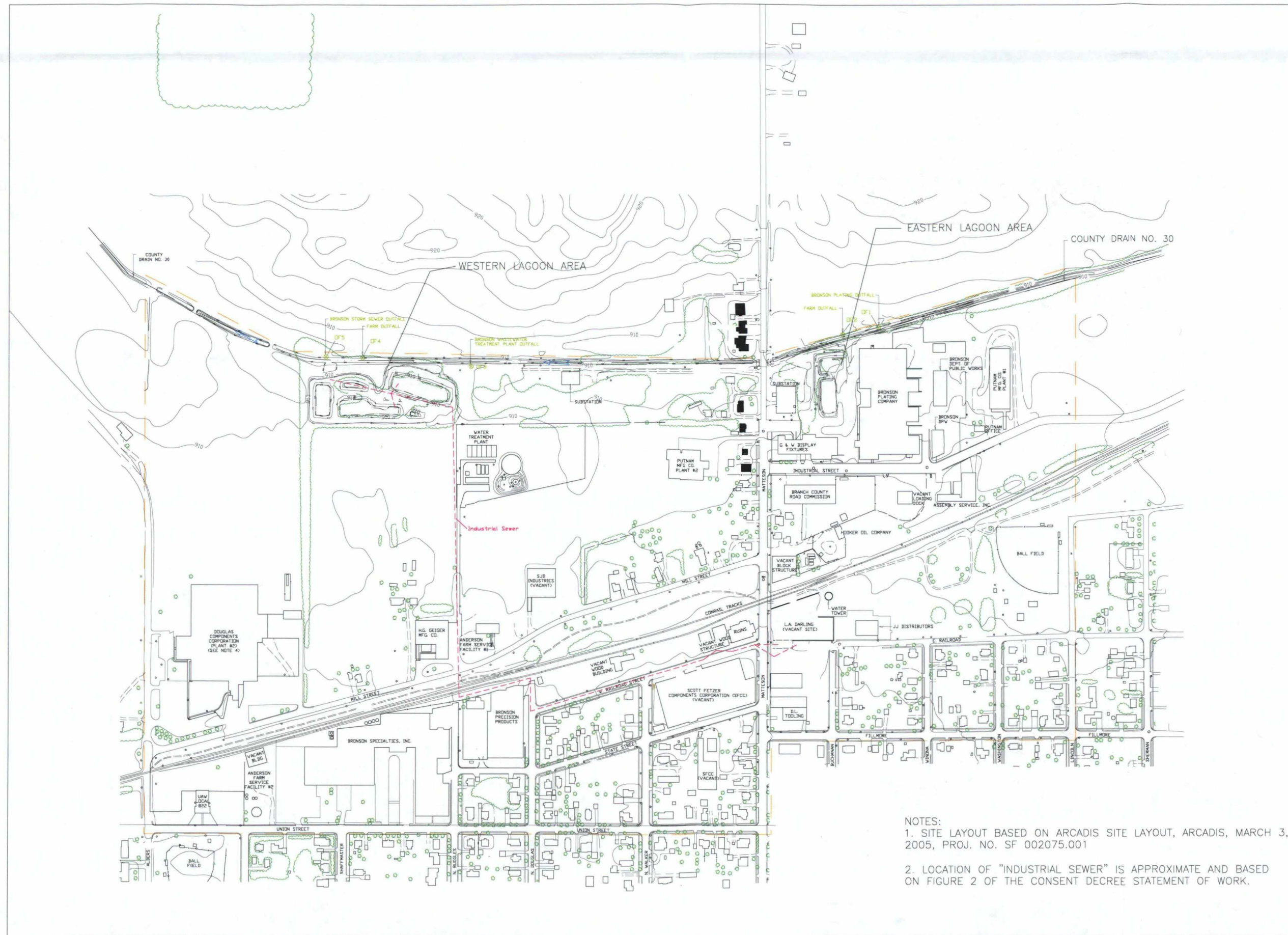


Figure 1

- LEGEND**
- APPROXIMATE SITE BOUNDARY
  - ✕ OUTFALL LOCATION AND NUMBER
  - SURFACE-WATER FLOW DIRECTION
  - RESIDENTIAL STRUCTURE WITHIN EASTERN LAGOON AREA STUDY AREA
  - - - APPROXIMATE INDUSTRIAL SEWER

NORTH BRONSON  
INDUSTRIAL AREA SITE  
BRONSON, MICHIGAN

SITE LAYOUT

- NOTES:**
1. SITE LAYOUT BASED ON ARCADIS SITE LAYOUT, ARCADIS, MARCH 3, 2005, PROJ. NO. SF 002075.001
  2. LOCATION OF "INDUSTRIAL SEWER" IS APPROXIMATE AND BASED ON FIGURE 2 OF THE CONSENT DECREE STATEMENT OF WORK.



FILE NO. 12716.41686  
JUNE 2008

